Docket No. 02-0837
Staff Exhibit 9.0

REBUTTAL TESTIMONY

of

Rochelle Phipps
Financial Analyst

Finance Department
Financial Analysis Division
Illinois Commerce Commission

General Rate Increase

Central Illinois Light Company

Docket No. 02-0837

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SCHEDULES

Witness Identification

1. Q. State your name, employer and business address.

A. My name is Rochelle Phipps. I am employed by the Illinois Commerce Commission ("Commission"), 527 East Capitol Avenue, Springfield, Illinois 62701.

2. Q. Are you the same Rochelle Phipps that provided direct testimony in this proceeding?

A. Yes.

3. Q. What is the purpose of your testimony in this proceeding?

A. I will respond to Central Illinois Light Company ("Cilco" or "Company") witnesses Michael G. O'Bryan on the Company's flotation cost adjustment and Dr. Jonathan A. Lesser on the Company's cost of common equity for its gas operations.

4. Q. What overall cost of capital do you recommend for Cilco's gas operations ("Cilco Gas")?

A. I recommend an 8.12% overall cost of capital for Cilco Gas, as shown on Schedule 9.1. My cost of capital recommendation reflects a 10.47% cost of equity.

Staff's Updated Cost of Equity Analysis

5. Q. Why did you update your cost of equity analysis?

A. I updated my cost of equity analysis in response to the rebuttal testimony of Dr. Lesser, including his updated cost of equity analysis.

6. Q. Describe your updated cost of equity analysis.

A. I measured the investor-required rate of return on equity for Cilco Gas with the discounted cash flow ("DCF") and risk premium models. I applied both models to the LDC Sample presented in Staff Exhibit 3.0 on pages 12 and 13.

7. Q. Dr. Lesser states that he did not include New Jersey Resources in his sample because it does not derive at least 75% of its revenue from gas operations.[1] Why does your LDC Sample include New Jersey Resources?

A. In 2002, New Jersey Resources' utility subsidiary, New Jersey Natural Gas, accounted for 42% of New Jersey Resources' total revenues (energy services operations accounted for 57% of the revenues and retail and other operations accounted for 1% of the revenues). Yet, 85% of New Jersey Resources' operating income and net income were derived from gas operations.[2] Furthermore, Standard & Poor's ("S&P") published a report that indicates New Jersey Natural Gas represents more than 90% of the consolidated assets of New Jersey Resources.[3] That is, the vast majority of capital has been invested in the gas distribution business and investors'

[1] Cilco Rebuttal Ex. 7.10 at 31.
[2] New Jersey Resources 2002 Annual Report.
[3] Standard & Poor's Research: New Jersey Natural Gas Co., August 20, 2002.

future earnings depend predominantly on that business. Thus, New Jersey Resources should be included in the LDC Sample.

8. Q. Describe your updated DCF analysis.

A. I applied the constant-growth quarterly DCF model presented on pages 14 and 15 of Staff Exhibit 3.0 to the companies composing the LDC Sample using current financial data. I averaged IBES and Zacks growth rate estimates to measure market-consensus expected growth, as presented on Schedule 9.2. I measured each firm's current stock price with its closing market price from May 13, 2003, as presented on Schedule 9.3. I estimated the expected quarterly dividends for the companies composing the LDC Sample in the same manner described on page 17 of Staff Exhibit 3.0. The current quarterly dividends and the expected quarterly dividends for the companies composing the LDC Sample are presented on Schedule 9.3 and Schedule 9.4, respectively.

9. Q. Based on your updated DCF analysis, what is the estimated required rate of return on common equity for the LDC Sample?

A. The updated DCF analysis estimated a required rate of return on common equity of 10.28% for the LDC Sample, as shown on Schedule 9.5. That result represents an average of the DCF estimates for the individual companies in the LDC Sample, which are derived from the growth rates presented on Schedule 9.2, the stock prices and dividend payments presented on

Schedule 9.3 and the expected quarterly dividends presented on Schedule 9.4.

10. Q. Describe your updated risk premium analysis.

A. I applied the capital asset pricing model ("CAPM"), a one-factor risk premium model, presented on page 19 of Staff Exhibit 3.0. To estimate the risk-free rate of return, I examined the suitability of the yields on three-month U.S. Treasury bills and long-term U.S. Treasury bonds. Three-month U.S. Treasury bills are currently yielding 1.09%. The estimated yield for U.S. Treasury bonds equals 4.85%. Both estimates are derived from quotes for May 13, 2003, as presented on Schedule 9.6. The economic forecasts described on pages 22 and 23 of Staff Exhibit 3.0 imply a long-term nominal risk-free rate between 5.7% and 6.3%. Those forecasts suggest that the U.S. Treasury bond yield more closely approximates the long-term risk-free rate, currently. As I noted in direct testimony, the U.S. Treasury bond yield is an upwardly biased estimator of the long-term risk-free rate due to the inclusion of an interest rate risk premium associated with its relatively long term to maturity, which also indicates that the forecasts of the components of the long-term risk-free rate exceed investor requirements for that rate.

To estimate the expected rate of return on the market, I conducted a DCF analysis on the firms comprising the S&P 500 Index ("S&P 500") as of March 31, 2003, using the methodology described on pages 24 and 25 of Staff Exhibit 3.0. The estimated weighted rate of return for the dividend-paying

companies composing the S&P 500, composing 84.57% of the market capitalization of the S&P 500, equals 14.37%.

I used an average beta estimate that reflects (1) March 21, 2003, Value Line beta estimates and (2) a regression analysis for the 60 months ending April 2003. The average Value Line adjusted beta for the LDC Sample is 0.69. The regression beta estimate for the LDC Sample is 0.52.

11. Q. What required rate of return on common equity does the updated risk premium model estimate for the LDC Sample?

A. The updated risk premium analysis estimates a required rate of return on common equity of 10.66% for the LDC Sample. The computation of that estimate appears on Schedule 9.6.

12. Q. In direct testimony you recommended that Cilco not be allowed a flotation cost adjustment.[4] Has your recommendation changed?

A. No. In Cilco's last rate proceeding, the Commission concluded that Cilco had not demonstrated that a flotation cost adjustment should be allowed.[5] In the instant proceeding, Cilco has not presented any new evidence that a flotation cost adjustment should be made to its cost of equity. Thus, based on the Commission's conclusion in the last rate proceeding, a flotation cost adjustment is not warranted in the current proceeding.

13. Q. Based on your entire updated analysis, what is your estimate of Cilco Gas' cost of common equity?

A. Along with DCF and risk premium analyses, I have considered the observable 6.19% rate of return the market currently requires on less risky A-rated long-term debt.[6] Based on my updated analysis, in my judgment, the investor-required rate of return on common equity for Cilco Gas is 10.47%, which represents the average of the results of my updated DCF and CAPM analyses for the LDC Sample.

Response to Dr. Jonathan A. Lesser

14. Q. Summarize your assessment of Dr. Lesser's rebuttal testimony.

A. Dr. Lesser's rebuttal testimony contains numerous errors including mischaracterizations of my cost of equity analyses, misinterpretations of financial theory and shortcomings in implementation of financial models.

1. Dr. Lesser alleges that my cost of equity recommendation includes a flotation cost adjustment.[7] As Cilco witness O'Bryan recognizes in his rebuttal testimony,[8] my original 10.57% cost of equity recommendation did not include a flotation cost adjustment.[9] Furthermore, my updated cost of equity recommendation of 10.47% does not include a flotation cost adjustment.

[4] Staff Ex. 3.0 at 29.
[5] Order, Docket Nos. 01-0465/0530/0637 Consolidated, March 28, 2002, at 79.
[6] The Value Line Investment Survey, Selection & Opinion, May 9, 2003.
[7] Cilco Rebuttal Ex. 7.10 at 3.
[8] Cilco Rebuttal Ex. 8.3 at 2.

2. Dr. Lesser alleges that I "shopped" for specific dates in search of "favorable" closing stock prices,[10] which suggests that I selected a measurement date that would result in a "suitable" cost of equity estimate. I did not "shop" for a specific date in search of "favorable" closing stock prices that "suit" me. In preparation of my original cost of common equity recommendation, I did not perform any analysis using data from another day nor did I examine stock prices or interest rates with the intent of producing a "favorable" cost of equity estimate. To the contrary, Dr. Lesser's own DCF analysis indicates that any date from the two weeks preceding February 28, 2003, the date of my original cost of common equity analysis would have produced a lower DCF-derived estimate of the cost of common equity.[11] I chose the February 28, 2003, measurement date since it was the latest date possible that provided adequate time to perform the analysis, provide it to other Staff witnesses who needed it to calculate the revenue requirement and design rates, and complete my testimony by the March 20th filing deadline.

Dr. Lesser's rebuttal testimony contains numerous other errors, which I will address in greater detail later but summarize below.

1. Dr. Lesser's updated cost of equity analysis overstates Cilco Gas' cost of equity due to Dr. Lesser's misapplication of the DCF model, CAPM and risk premium model ("RPM").

[9] Staff Ex. 3.0 at 29.
[10] Cilco Rebuttal Ex. 7.10 at 10-11.

2. Dr. Lesser incorrectly asserts that using historical data to determine a forward-looking cost of equity is appropriate and necessary.[12]

1. Dr. Lesser misinterprets the ramifications of the efficient market hypothesis ("EMH") for cost of common equity measurement.[13]

2. Dr. Lesser wrongly endorses using average rather than spot stock prices in the DCF model, which results in inaccurate cost of equity estimates.[14]

3. Dr. Lesser incorrectly alleges that my DCF model calculations contained several arithmetic and data errors.[15] Those alleged "errors" relate to the dividend payment assumptions used my DCF model.[16]

4. Dr. Lesser mischaracterizes my testimony as estimating a 6.0% risk-free rate of return[17] despite the fact that my CAPM analysis reflects a 4.88% risk-free rate of return as presented in Staff Exhibit 3.0, Schedule 3.09.

5. Dr. Lesser wrongly criticizes the weighted average cost of equity that I used to estimate the market rate of return for being inconsistent with the

[11] Cilco Rebuttal Ex. 7.11. In addition, Dr. Lesser's flawed DCF analysis suggests that the cost of common equity did not exceed that of February 28, 2003, for another week.
[12] Cilco Rebuttal Ex. 7.10 at 21-22.
[13] Cilco Rebuttal Ex. 7.10 at 11.
[14] Cilco Rebuttal Ex. 7.10 at 5-10.
[15] Cilco Rebuttal Ex. 7.10 at 4.
[16] Company responses to Staff data requests FIN-51 and FIN-52.
[17] Cilco Rebuttal Ex. 7.10 at 14.

simple average cost of equity that I calculated for the LDC Sample with the DCF model.[18,19]

6. In summarizing his response to my analysis and testimony, Dr. Lesser alleges that several of the assumptions used in his cost of equity analysis were more conservative than my assumptions.[20] Yet, Dr. Lesser ultimately cites only one such example, which involves estimates of the market return.[21]

7. Dr. Lesser erroneously alleges that I misunderstand the nature of the expected market rate of return.[22]

8. Dr. Lesser's provides insufficient support for his historical risk premium calculation that improperly subtracts earned U.S. Treasury bond income returns from earned large company total stock returns.[23]

9. Dr. Lesser provides no valid support for his criticisms of my regression beta estimate for the LDC Sample.[24]

[18] Cilco Rebuttal Ex. 7.10 at 19, Footnote 6; Company response to Staff data request FIN-58.
[19] Dr. Lesser's historical earned market return estimate is a weighted average (Cilco Ex. 7.8, Schedule 3R; Cilco Ex. 7.9, Schedule 3; Ibbotson Associates, Stocks, Bonds, Bills and Inflation 2002 Yearbook, at 51) while his Value Line-based market return estimate uses median values (Cilco Ex. 7.8, Schedules 3R and 4; Cilco Ex. 7.9, Schedule 3), yet Dr. Lesser uses a simple average to estimate Cilco's cost of equity (Cilco Ex. 7.0 at 53; Company response to Staff data request FIN-36; Cilco Rebuttal Ex. 7.10 at 34).
[20] Cilco Rebuttal Ex. 7.10 at 4.
[21] Cilco Rebuttal Ex. 7.10 at 17.
[22] Cilco Rebuttal Ex. 7.10 at 17.
[23] Cilco Rebuttal Ex. 7.10 at 19-21.

10. Dr. Lesser's RPM improperly applies a market risk premium-based beta to a non-market risk premium.[25]

11. Dr. Lesser's RPM lacks a basis in financial theory and should be rejected.[26]

Company's Updated Cost of Equity Analysis

15. Q. Explain why Dr. Lesser's updated DCF, CAPM and risk premium analyses are unreasonable.

A. Dr. Lesser's updated analyses result in an 11.73% cost of equity for Cilco Gas.[27] Those analyses overstate the cost of equity for Cilco Gas due to Dr. Lesser's misapplication of the cost of equity models. Cilco's updated DCF, CAPM and risk premium analyses should be rejected for the following reasons.

1. The updated DCF model suffers the following problems: (a) it employs average stock price data, which the Commission has previously rejected;[28] (b) it improperly uses February 28th growth rate estimates in combination with historical average daily stock prices for the 30 days preceding March 31st even though the growth rate estimates published by IBES and Zacks would have been updated during that measurement

[24] Cilco Rebuttal Ex. 7.10 at 23-28.
[25] Cilco Rebuttal Ex. 7.10 at 33.
[26] Cilco Rebuttal Ex. 7.10 at 29-30 and Company response to Staff data request FIN-63.
[27] Cilco Rebuttal Ex. 7.10 at 34.
[28] Order, Docket No. 92-0357, July 21, 1993, at 66; Order, Docket No. 95-0076, December 20, 1995, at 69.

period;[29] and (c) it calculates expected dividends in a manner that ignores reality.

2. Both of the updated CAPM analyses presented in Cilco Rebuttal Exhibit 7.11 should be rejected because Dr. Lesser's highest CAPM-derived cost of equity estimate reflects a 6.0% risk-free rate of return that he incorrectly asserts is Staff's risk-free rate estimate[30] and the updated sample beta estimate provided in Cilco Rebuttal Exhibit 7.15 includes an incorrect beta estimate for Laclede Group.[31]

3. The updated risk premium model should also be rejected because the model has no basis in financial theory and improperly applies a market risk premium-based beta to a non-market risk premium.

Historical Data

16. Q. Explain why you disagree with Dr. Lesser's claim that the use of historical data to determine a forward-looking concept is appropriate and necessary.[32]

A. When asked to support his claim that historical data can be a useful guide in determining whether current conditions are aberrant,[33] Dr. Lesser stated that

[29] Although Cilco Rebuttal Ex. 7.10 states that Dr. Lesser updated the earnings growth rate estimates (See lines 691-692), Company response to Staff data request FIN-65 indicates he used the February 28, 2003, earnings growth rate estimates used by Staff and presented on Staff Ex. 3.0, Schedule 3.5. Dr. Lesser used stock prices for the 30 days ending March 31, 2003. Company response to Staff data request FIN-72.
[30] Cilco Rebuttal Ex. 7.10 at 14.
[31] Cilco Rebuttal Ex. 7.15 shows a 0.65 beta value for Laclede Group; however, the March 21, 2003, Value Line report for Laclede Group shows a 0.60 beta value.
[32] Cilco Rebuttal Ex. 7.10 at 21-22.

he was not relying on any specific documents but on his experience with econometric and time series modeling and forecasting models.[34] Dr. Lesser provided no evidence that those econometric and time series forecasting models related to estimating the cost of equity or the ability to predict future earnings growth rates and interest rates using historical data. Instead, Dr. Lesser provided instances in which he believed that the DCF and CAPM models use historical data. Those examples fail to demonstrate that historical data is appropriate for estimating a company's cost of equity.

First, Dr. Lesser asserts that historical dividend yields are used as the basis for forecasting future dividend payments.[35] However, the DCF model reflects expected dividend yields that are calculated starting from the most recent dividend payments, but assumes those recent dividend payments increase at the expected earnings growth rate. Dr. Lesser asserts further that earnings growth rate forecasts will almost always be historic relative to today's stock prices.[36] That assertion confuses form (i.e., whether the date of an earnings growth forecast precedes the date of a stock price) for substance (e.g., whether that earnings growth rate forecast is the most recently available). A timely and relevant cost of equity estimate requires combining current earnings growth rate estimates with current stock prices.

[33] Cilco Rebuttal Ex. 7.10 at 22.
[34] Company response to FIN-59.
[35] Cilco Rebuttal Ex. 7.10 at 22.
[36] Cilco Rebuttal Ex. 7.10 at 22.

Second, Dr. Lesser asserts that historical stock prices are used to calculate individual stock price betas.[37] Although that is correct, both the Value Line and regression betas for the LDC Sample are adjusted to estimate forward-looking beta values, using the formulas shown in Staff Exhibit 3.0, pages 26-27.

Furthermore, Dr. Lesser again confuses two concepts. This time, Dr. Lesser confuses the estimation of expected stock returns with the estimation of the variance (and covariance) of stock returns. Fischer Black, co-developer of the Black-Scholes option pricing model, provided the following explanation in the article, "Estimating Expected Return."

> Explaining variance is easy. We can use daily (or more frequent) data to estimate covariances. Our estimates are accurate enough that we can see the covariances change through time. Explaining return or average return is easy too, because that's just a way of explaining variance.
>
> Estimating expected return is hard. Daily data can hardly help at all. Only longer time periods help. We need decades of data for accurate estimates of average expected return. We need such a long period to estimate the average that we have little hope of seeing changes in expected return.[38]

In other words, because realized stock returns are so noisy (i.e., display a large degree of variability), extremely long time periods are necessary to estimate expected stock returns from realized stock return data.[39] In contrast,

[37] Cilco Rebuttal Ex. 7.10 at 22.
[38] Black, Fischer, "Estimating Expected Return," ~~Financial Analysts Journal~~, January/February 1995, at 168-171.
[39] Longer time periods improve reliability because realized stock return variability declines as the holding period return increases. For example, over the 1926-2001 period, the 5-year realized large company stock ranged from –12.47% to 28.55%% in contrast to a range of –43.34% to 53.99% for one-year realized returns. (Ibbotson Associates, ~~Stocks, Bonds, Bills and Inflation 2002 Yearbook~~, at 41.)

betas are estimated from stock return variability.[40] The models that are used to calculate betas are models of variance, not expected return.[41]

Efficient Market Hypothesis

17. Q. What is the Efficient Market Hypothesis ("EMH")?

A. The EMH posits that stock prices immediately reflect all available information.[42]

18. Q. Explain how Dr. Lesser misinterprets the ramifications of the EMH for cost of common equity measurement.[43]

A. According to Dr. Lesser, reliance on a single day's closing stock price to estimate Cilco's cost of equity using the DCF model raises the question of the nature and reliability of the EMH.[44] Dr. Lesser asserts that the nature of the EMH and the controversies surrounding it are clarified in the following two articles: (1) "The Efficient Market Hypothesis and Its Critics," written by Burton Malkiel ("Malkiel");[45] and (2) "From Efficient Markets Theory to Behavioral Finance," written by Robert Shiller ("Shiller").[46] Those articles do not support Dr. Lesser's use of a 30-day average stock price.

[40] Black, Fischer, "Estimating Expected Return," ~~Financial Analysts Journal~~, January/February 1995, at 168.
[41] The "market model" depicted at Staff Ex. 3.0, pages 25-26, is a model of variance. Black, Fischer, "Estimating Expected Return," ~~Financial Analysts Journal~~, January/February 1995, at 168; Bodie, Zvi, Alex Kane and Alan J. Marcus, ~~Investments~~, 3rd edition, Irwin McGraw-Hill, 1989, at 277.
[42] Bodie, Zvi, Alex Kane and Alan J. Marcus, ~~Investments~~, 3rd edition, Irwin McGraw-Hill, 1989, at 339-341.
[43] Cilco Rebuttal Ex. 7.10 at 6.
[44] Cilco Rebuttal Ex. 7.10 at 5.
[45] Malkiel, Burton G., "The Efficient Market Hypothesis and Its Critics," ~~Journal of Economic Perspectives~~, Winter 2003, provided in Company response to Staff data request FIN-50.

Dr. Lesser asserts that Malkiel and Shiller agree that the EMH does not preclude pricing errors. From this, Dr. Lesser incorrectly concludes that use of spot stock prices invites error and unfairness to utility ratepayers, investors or both.[47] To the contrary, Malkiel concludes that, "stock markets are far more efficient and far less predictable than some recent academic papers would have us believe." Malkiel states:

> Pricing irregularities and even predictable patterns in stock returns can appear over time and even persist for short periods…. But I suspect that the end result will not be an abandonment of the belief of many in the profession that the stock market is remarkably efficient in its utilization of information. Periods such as 1999 where "bubbles" seem to have existed, at least in certain sectors of the market, are fortunately the exception rather than the rule. Moreover, whatever patterns or irrationalities in the pricing of individual stock that have been discovered in search of historical experience are unlikely to persist and will not provide investors with a method to obtain extraordinary returns.[48]

Another behavioral finance proponent, Meir Statman, echoes Malkiel's sentiment in the article, "Behavioral Finance: Past Battles and Future Engagements." Statman argues that market efficiency has two meanings. One meaning is that investors cannot systematically beat the market. The other is that security prices are rational. Statman recommends accepting market efficiency in the beat-the-market sense and rejecting it in the rational

[46] Shiller, Robert J., "From Efficient Markets Theory to Behavioral Finance," ~~Journal of Economic Perspectives~~, Winter 2003, provided in Company response to Staff data request FIN-50.
[47] Cilco Rebuttal Ex. 7.10 at 8.
[48] Malkiel, Burton G., "The Efficient Market Hypothesis and Its Critics," ~~Journal of Economic Perspectives~~, Winter 2003, provided in Company response to Staff data request FIN-50.

prices sense.[49] Thus, Malkiel and Statman agree that pricing irregularities do not invalidate the implications of the EMH.

Stock Prices in the DCF Model

19. Q. Describe the problems inherent in Dr. Lesser's use of historical stock prices in the DCF model.

A. First, as new information becomes available every day, investors rethink their projections of future cash flows and the risk level of a company. Any information reflected in historical prices, as well as new information that is not, is reflected in current prices to the extent investors deem it to have relevance. Thus, only a current stock price will reflect all information that is available and relevant to the market. Using historical data gives undue weight to information that may be obsolete.

Reliance on historical average stock prices implies that prices will revert to some mean. That implication is even more questionable for security returns since they approximate a random walk, which suggests no tendency of mean reversion.[50]

Finally, even if securities data were mean reverting, there is no method for determining the true value of that mean. Consequently, sample means, the magnitude of which depends upon the measurement period used, are

[49] Statman, Meir, "Behavioral Finance: Past Battles and Future Engagements," ~~Financial Analysts Journal~~, vol. 55, no. 6, November/December 1999.
[50] Malkiel, Burton G., ~~A Random Walk Down Wall Street~~, 4th Edition, Norton, 1985, at 132 and 146.

substituted. Since there is no proven method for determining the appropriate measurement period to use, any measurement period chosen would be arbitrary, rendering the results uninformative. That is, use of historical data in determining required rates of return renders such estimates susceptible to manipulation. Dr. Lesser's DCF model that uses one-month average stock prices implies that the one-month average represents the mean to which those stock prices will revert; yet Dr. Lesser provides no basis for that assumption. Even Dr. Lesser's article, "DCF Utility Valuation: Still the Gold Standard?" which he cites as support for using average stock prices in the DCF model recognizes that the number of trading days to use in computing an average stock price is arbitrary.[51]

20. Q. Please respond to Dr. Lesser's claim that your use of a single day's stock price in the DCF model fails to address the short-term uncertainty of cost of equity estimates, especially when they are developed in order to establish a utility's long-term allowed return."[52]

A. Dr. Lesser claims that using a single day's closing stock price is problematical because the overall level of utility stock price volatility has more than doubled in the last ten years.[53] His only support for that claim is his own article, "DCF Utility Valuation: Still the Gold Standard," in which he

[51] Lesser, Jonathan A., "DCF Utility Valuation: Still the Gold Standard?" ~~Public Utilities Fortnightly~~, February 15, 2003, at 16.
[52] Cilco Rebuttal Ex. 7.10 at 5.
[53] Cilco Rebuttal Ex. 7.10 at 9.

advocates using average stock prices in the DCF model to reduce the variation in the computed cost of equity.[54]

The article attempts to illustrate that stock price volatility results in inaccurate cost of equity estimates but fails to do so for several reasons. First, Dr. Lesser's analysis contains a methodological error that exaggerates volatility. Specifically, Dr. Lesser annualizes periodic volatility,[55] which overstates annual volatility.[56] Second, Dr. Lesser's analysis relies upon computer-generated data for a given stock price with an annual volatility of 35%. This approach fails to separate random variation from variation due to changes in expectations of future dividend growth and required rates of return; thus, the degree to which Dr. Lesser's supposed depiction of volatility in cost of equity estimates actually reflects mispricing is unknown. Third, Dr. Lesser does not provide support for his use of 35% stock price volatility.[57] Furthermore, Dr. Lesser's article misapplies the DCF model by assuming the growth rate remains constant while stock price varies, which is the same DCF implementation problem present in Cilco Rebuttal Exhibit 7.11. Thus, Dr. Lesser's article does not demonstrate that historical average stock prices are superior to single day prices in a cost of equity analysis.

[54] Lesser, Jonathan A., "DCF Utility Valuation: Still the Gold Standard?" ~~Public Utilities Fortnightly~~, February 15, 2003.
[55] It appears that in his article, Dr. Lesser uses daily stock price changes, but the article does not state so explicitly.
[56] Annualizing daily volatility wrongly assumes that the stock price changes by the same amount, in the same direction, every day for one year. If that were true, stock price movements would be predictable, and therefore, stocks would not be risky.

21. Q. To illustrate the variation in cost of equity estimates resulting from using a single day's closing stock prices, Dr. Lesser presents Cilco Rebuttal Exhibit 7.11, which contains cost of equity estimates for the January 2, 2003, through March 31, 2003, measurement period. Are those cost of equity estimates reasonable?

A. No. Cilco Rebuttal Exhibit 7.11 misapplies the DCF model since it combines February 28th growth rate estimates and daily stock prices for the three months ending March 31, 2003, for the companies composing Staff's LDC Sample. IBES and Zack's publish earnings growth rate estimates on a monthly basis and a daily basis, respectively; yet, Dr. Lesser does not synchronize his growth rate estimates with time period in that analysis. Thus, the growth rate estimates Dr. Lesser uses reflect information that was unavailable to the market for two-thirds of the stock price measurement period. That implied investor prescience is inappropriate and the resulting cost of equity estimates can only measure investor requirements by chance.

22. Q. Dr. Lesser specifically notes the variation in Nicor's cost of equity during the January through March measurement period.[58] Do you have any insight into the probable causes of that variation?

A. The wide range of cost of equity estimates presented in Cilco Rebuttal Exhibit 7.11 are as likely due to identifiable events than random stock

[57] The article contains a vague statement regarding Dr. Lesser's use of stock price volatility of 35%, yet it is unclear how he arrived at that figure.
[58] Cilco Rebuttal Ex. 7.10 at 8.

volatility. On February 28th, I estimated an 11.80% cost of equity for Nicor.[59] Dr. Lesser estimated an 11.94% cost of equity for Nicor on March 5th.[60] On that day, Nicor shares dropped as much as 7% after the company lowered its target for 2003 earnings, blaming lower operating results from its gas distribution unit.[61] All else equal, a lower stock price would result in a higher dividend yield, which would raise the cost of equity estimate. However, the earnings warnings would likely lower investors' growth expectations for at least the near-term.

According to Cilco Rebuttal Exhibit 7.11, Dr. Lesser estimated a 13.67% cost of equity for Nicor on March 10th. On that day, The Wall Street Journal published two articles relating to Nicor. One article stated that Illinois Commerce Commission Staff recommended Nicor Gas pay a $27 million fine for allegedly providing misleading information about its performance-based rate gas supply program.[62] The other article stated that the Security and Exchange Commission's ("SEC") enforcement division planned to recommend that the agency bring a civil action against Nicor Energy, a unit of Nicor Inc., relating to the SEC's investigation into Nicor's performance-based rate gas supply program.[63] It is possible that Nicor's stock price dropped that day in response to the events those articles

[59] Staff Ex. 3.0, Schedule 3.8.
[60] Staff takes issue with the Cilco Rebuttal Ex. 7.11 due to Dr. Lesser's misapplication of the DCF model. Staff uses the cost of equity estimates provided on Cilco Rebuttal Ex. 7.11 for illustrative purposes only.
[61] "Nicor shares fall on lower 2003 target," CBS.MarketWatch.com, March 5, 2003.
[62] Kamp, Jon, "Illinois Regulatory Staff Call for $27 Mln Nicor Fine," The Wall Street Journal, March 10, 2003.
[63] McCarty, Phil, "SEC Enforcement to Back Civil Action Vs Nicor Unit," The Wall Street Journal, March 10, 2003.

published in The Wall Street Journal relate. That same day, after stock markets closed, Nicor released a statement in response to the article, stating, "Any SEC civil enforcement action against Nicor Energy is not expected to have a material impact on the results of Nicor."[64] The following day, Dr. Lesser estimated a 13.20% cost of equity for Nicor, which is a 47 basis points decrease, indicating Nicor's stock price rose following the company's responsive press release. Thus, Nicor's stock price movements were probably not random but based upon events investors perceived as affecting the value of Nicor stock. Furthermore, averaging Nicor's stock prices, such as Dr. Lesser did, obscures the market's continual reassessment of Nicor's stock value.

23. Q. Dr. Lesser argues that your criticism of 30-day average stock prices in the DCF model and your argument that observed changes in stock prices do not necessarily reflect changes in the required return on common equity suffer from contradictory logic.[65] Explain why Dr. Lesser's argument is incorrect.

A. Staff Exhibit 3.0 states the following:

> Since current stock prices reflect the market's current expectations of the cash flows the securities will produce and the rate at which those cash flows are discounted, an observed change in the market price does not necessarily indicate a change in the required rate of return on common equity. Rather, a price change may simply reflect investors' re-evaluation of expected dividend growth rate. In addition, stock prices change with the approach of dividend payment dates. Consequently, when estimating the required rate of return on common

[64] Press Release, "Nicor Responds to New Reports Regarding Nicor Energy," March 10, 2003, 8:14 p.m.
[65] Cilco Rebuttal Ex. 7.10 at 10.

> equity with the DCF model, one should measure the expected dividend yield and the corresponding growth rate concurrently.

Dr. Lesser disagrees with my statement for two reasons. First, he asserts that it implies that any calculation of the cost of equity using a given day's closing stock price may be the "correct" price with which to calculate a cost of equity value. Second, he asserts that my argument that stock prices change with the approach of a dividend payment date is unfounded and contradicts the EMH.[66] In response to a Staff data request, Dr. Lesser indicated that he interpreted my testimony as an admission that stock prices change in a manner that is measurably different from the stochastic "random walk" behavior normally attributed to stock price changes.[67] Once again, Dr. Lesser misinterprets a fundamental financial concept - market efficiency. He infers too much from the fact that stock prices change with the approach of dividend payment dates, which is undeniably true.[68] (If it were not, then (1) the very foundation of the DCF model, the time value of money, would be invalid; and (2) there would be no "ex-dividend effect," which is the tendency of stock prices to decline on the ex-dividend date.) However, this change in stock prices does not violate the EMH because the approach of dividend payment dates is known to all investors; and thus, reflected in stock prices. It is not a market imperfection that can be systematically exploited to earn abnormally high rates of return.

[66] Cilco Rebuttal Ex. 7.10 at 10-11.
[67] Company response to Staff data request FIN-55.
[68] Brigham, Eugene F., Louis C. Gapenski and Michael C. Ehrhardt, ~~Financial Management: Theory and Practice~~, 9th edition, The Dryden Press, 1999, at 674-675.

Regarding Dr. Lesser's second statement, the changes in stock prices as dividends approach are not contrary to the random walk theory.[69] Rather, they are related to the time value of money, as illustrated in Schedule 9.8. Moreover, growing dividend payments are part of the up-trend in common stock prices that are the sole exception to the random walk theory.[70] In summary, stock price trend rises between ex-dividend dates, declines on the ex-dividend date and continues this cycle in an upward trend that reflects growth. However, recognizing the existence of an underlying trend in stock prices is not mutually exclusive from recognizing that stock prices are volatile; that is, variability can exist around that trend.

24. Q. Why do you disagree with Dr. Lesser's reference to a "correct" stock price for which to estimate the cost of equity?

A. Staff Exhibit 3.0 states, "using historical stock prices along with current growth expectations or combining an updated stock price with past growth rate expectations will likely produce an inaccurate estimate of the market-required rate of return on common equity."[71] Dr. Lesser wrongly infers that my use of the word "inaccurate" is synonymous with the word "incorrect."[72] I am not suggesting that investors will not make mistakes in valuing common stocks. However, in my judgment, the market is efficient in the sense that it quickly and accurately reflects investors' expectations, regardless of whether

[69] Malkiel, Burton G. ~~A Random Walk Down Wall Street~~, 4th edition, Norton, 1985, at 132.
[70] ~~Ibid~~.
[71] Staff Ex. 3.0 at 16-17.
[72] Company response to Staff data request FIN-54.

those expectations are right or wrong.[73] Although investor expectations may differ from actual returns, the investor-required rate of return, which is based on expectations, is the appropriate measure for estimating the cost of equity for a utility since investor expectations, not investors' ability to correctly value securities, determine the price investors will pay to buy a common stock.

Dividend Payments in the DCF Model

25. Q. Respond to Dr. Lesser's assertion that you do not use the correct future dividend payments as specified in the quarterly DCF model.[74]

A. Dr. Lesser agrees that the companies composing my LDC Sample probably do not adjust their dividends more frequently than once per year. However, he finds this to be immaterial to the calculations made using the quarterly DCF model.[75] Essentially, Dr. Lesser criticizes my implementation of the DCF model for its closer reflection of reality than his mechanistic application of that model. In response to a Staff data request asking whether Dr. Lesser believes that timing of dividend payments have an effect on stock prices, Dr. Lesser responded that he has not performed empirical research as to the effects of forthcoming dividend payments on stock prices.[76] That is a troubling response since the relationship between security values and the timing of cash flows is a fundamental tenet of investment theory in general and the DCF model in particular. Schedule 9.8 presents the difference

[73] Statman, Meir, "Behavioral Finance: Past Battles and Future Engagements," ~~Financial Analysts Journal~~, November/December 1999, at 18-27.
[74] Cilco Rebuttal Ex. 7.10 at 11.
[75] Company response to Staff data request FIN-70.
[76] Company response to Staff data request FIN-55.

between stock prices using an annual DCF model versus a quarterly DCF model and demonstrates that the timing of dividend payments does affect stock prices.

Risk-Free Rate of Return

26. Q. Dr. Lesser states, "To develop an updated range of the allowed COE for Cilco, I have used both a 5.33% value, based on the latest [Blue Chip Financial Forecast] published estimates, and a 6.0% value, based on the long-term forecasts cited by Ms. Phipps."[77] He also claims that your CAPM reflects an inappropriate risk-free rate estimate that is biased downward.[78] Please comment on Dr. Lesser's updated risk-free rate estimates.

A. On February 28, 2003, the U.S. Treasury bond yield was 4.88%. That figure was used in my CAPM analysis to represent the risk-free rate of return. Dr. Lesser disagrees with the use of a single day's U.S. Treasury bond yield as a proxy for the risk-free rate of return.[79] Because I stated that long-term economic forecasts imply a long-term, nominal risk-free rate between 5.7% and 6.3%, Dr. Lesser incorrectly concluded that a reasonable projection of the long-term risk-free rate is 6.0% (the average of 5.7% and 6.3%).[80] I also stated that the U.S. Treasury bond yield is an upwardly biased estimator of the long-term risk-free rate given that it reflects, in part, interest rate

[77] Cilco Rebuttal Ex. 7.10 at 16-17.
[78] Cilco Rebuttal Ex. 7.10 at 13.
[79] Cilco Rebuttal Ex. 7.10 at 14.
[80] Cilco Rebuttal Ex. 7.10 at 14.

expectations. Dr. Lesser asserts that those two arguments are logically inconsistent and cannot be true at the same time.[81]

My testimony is not contradictory. Rather, the current U.S. Treasury securities and the long-term economic forecasts serve distinct purposes. U.S. Treasury securities serve as proxies for the risk-free rate whereas economic forecasts help distinguish which U.S. Treasury security more closely approximates investor expectations of the long-term risk-free rate.

As explained in my direct testimony, the nominal risk-free rate of return should reflect only the real risk-free rate plus a premium for expected inflation. However, due to relatively long terms to maturity, U.S. Treasury bond yields are also exposed to a significant interest rate risk, thus a maturity risk premium is charged.[82] Despite this maturity premium, the yield on U.S. Treasury bonds is currently below forecasts of the components of the long-term nominal risk-free rate. Obviously, there exists a discrepancy between the real risk-free rate and inflation expectations embedded in the long-term forecasts cited in my direct testimony and those embedded in the U.S. Treasury bond yield. That is, those long-term forecasts differ from the expectations of the investing public (as reflected in U.S. Treasury bond yields), for investors are willing to accept a lower rate of return than the forecasts suggest.

[81] Cilco Rebuttal Ex. 7.10 at 15.
[82] Brigham, Gapenski, Ehrhardt, ~~Financial Management, Theory and Practice~~, The Dryden Press, 9th edition, 1999, at 134-136.

Significantly, U.S. Treasury bond yields reflect market forces, while forecasts do not. The true risk-free rate is reflected in the rate of return investors are willing to accept in the market. On February 28th, investors were willing to accept a 4.88% rate of return on U.S. Treasury bonds, despite the inclusion of a maturity premium in the U.S. Treasury bond yield.[83] That the U.S. Treasury bond yield includes a maturity premium indicates that the true long-term risk-free rate is actually below 4.88% and that the forecasts do not agree with investors.

27. Q. Can you quantify the interest rate risk premium contained in the U.S. Treasury bond yield?

A. No. The interest rate risk premium is not directly measurable. If it were, then I would have reduced my risk-free rate estimate by the amount of that premium.

Market Rate of Return

28. Q. Respond to Dr. Lesser's claim that the weighted average you used to estimate the market rate of return is inconsistent with the simple average that you used in your DCF-derived cost of equity estimate for Cilco Gas.[84]

[83] Currently, investors are wiling to accept a 4.85% rate of return on U.S. Treasury bonds, despite the U.S. Treasury bonds inclusion of a maturity premium. That is the risk-free rate of return estimate used in my updated CAPM analysis.
[84] Cilco Rebuttal Ex. 7.10 at 19; Footnote 6; Company response to Staff data request FIN-58.

A. "Consistency" is neither inherently good nor inherently bad. The worth of "consistency" cannot be assessed in a vacuum but must consider whether differences are merited based on facts and circumstances. Weighting the DCF-derived cost of equity estimates for my LDC Sample by market value would have resulted in a flawed cost of equity recommendation. The market rate of return equals the average of the security returns, after weighting each return by its proportion to total market value. In fact, the market portfolio itself comprises all risky securities, weighted in proportion to their market capitalization.[85] This is a well-recognized concept in financial literature.[86] Thus, proxies for the market portfolio, such as the S&P 500 and NYSE Composite Indices should be market-weighted. Dr. Lesser agrees that (1) the S&P 500 and the NYSE Composite Indices are weighted by market value and (2) according to the CAPM, the assets in the "market" are weighted by market value.[87] In contrast, the LDC Sample was constructed to estimate the cost of common equity for a single business – Cilco Gas, not the entire market or even an entire industry. Since the cost of common equity is a function of risk, the accuracy of the cost of equity estimate for Cilco Gas depends on whether the risk of the LDC Sample is similar to the risk of Cilco Gas. Thus, the objective of any scheme for weighting the companies composing the LDC Sample should be to increase the similarity of the LDC

[85] Defusco, Richard A. and Dennis W. McLEavy, et. al., ~~Quantitative Methods for Investment Analysis~~, Association for Investment Management and Research, 2001, at 592.
[86] Reilly, Frank K. and Keith C. Brown, ~~Investment Analysis and Portfolio Management~~, 6th edition, The Dryden Press, 2000, at 291; Richard A. and Dennis W. McLeavey, et. al., ~~Quantitative Methods for Investment Analysis~~, Association for Investment Management and Research, 2001, at 125; Harris, Robert S. and Felicia C. Marston, "The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts," Journal of Applied Finance, 2001;
[87] Company response to Staff data request FIN-58.

Sample's average (or weighted-average) risk to the risk of Cilco Gas. There is no evidence to suggest, and Dr. Lesser provides none, that the larger the company, the more similar its risk to Cilco Gas. A simple average properly assigns the same probability to each cost of equity estimate for the companies composing the LDC Sample. In summary, Dr. Lesser's observation that an "inconsistency" exists in the weighting of my LDC Sample and the market portfolio lacks substance.

29. Q. Does Dr. Lesser agree with your market rate of return estimate?

A. It is unclear whether Dr. Lesser agrees with my market rate of return estimate. Initially, Dr. Lesser asserts that Staff's market rate of return estimate is reasonable.[88] Then, he provides an explanation regarding why he finds it unreasonable.[89] Yet, Dr. Lesser uses my market rate of return estimate in his updated CAPM and risk premium analyses.[90]

30. Q. Dr. Lesser asserts that your expected market rate of return is higher than his market rate of return. Is Dr. Lesser correct?

A. Dr. Lesser is partially correct. My 14.29% estimate of the required rate of return on the market is higher than Dr. Lesser's 12.65% historical earned market rate of return but less than his 15.17% Value Line market rate of return that was calculated using a flawed methodology. (The problems with

[88] Cilco Rebuttal Ex. 7.10 at 3.
[89] Cilco Rebuttal Ex. 7.10 at 17.
[90] Cilco Rebuttal Ex. 7.10 at 32-33.

that methodology are addressed at length in Staff Exhibit 3.0 at pages 37-39.[91])

31. Q. Respond to Dr. Lesser's claim that you misunderstand what the estimated market rate of return represents and, as a consequence, your estimate of that rate suffers from a downward bias from the "true" expected market rate.[92]

A. Dr. Lesser asserts that my approach to estimating the market return is fundamentally flawed because it violates the underlying assumptions of the CAPM. He states, "In the CAPM, the market rate of return represents the return on all risky assets, including stocks and bonds."[93] Specifically, the market portfolio includes all risky assets, where every asset is represented in proportion to its capitalization, relative to the total market capitalization.[94] Dr. Lesser's argument is ironic given that he employs only stock market returns to calculate both his historical and expected market rate of return, as presented on Cilco Exhibit 7.8, Schedule 3R. My estimated market rate of return is based on a DCF analysis of the dividend-paying companies composing the S&P 500. Although an imperfect proxy for the entire market of assets, the S&P 500 is very representative of the stock market. On March 31, 2003, the Wilshire 5000, which is a capitalization-weighted index of all

[91] Dr. Lesser admits that his approach to estimating an expected market rate of return may overestimate the expected market rate of return. Instead, he used Staff's 14.29% expected market rate of return in his updated CAPM analysis. Company response to Staff data request FIN-60.
[92] Cilco Rebuttal Ex. 7.10 at 17-18.
[93] Cilco Rebuttal Ex. 7.10 at 18.
[94] DeFusco, McLeavey, Pinto and Runkle, ~~Quantitative Methods for Investment Analysis~~, Association for Investment Management and Research, 2001, at 592.

market-traded U.S. headquartered companies, had a market value of $9.8 trillion. In comparison, the S&P 500, which is a capitalization-weighted index of large capitalization stocks, had a market value of $7.8 trillion as of March 31, 2003, or 80% of the Wilshire 5000.

Dr. Lesser asserts that I failed to consider the effects arising from individual stock capitalization values that differed from those stock's book values, since the DCF model tends to drive a stock's price to its book value.[95] He also asserts that my methodology must result in a downward bias to the expected market rate of return based on my argument in direct testimony that the market would expect the prices of non-dividend paying stocks to appreciate relative to stocks that do pay dividends. That statement responds to Dr. Lesser's improper expected market rate of return calculation in which he added the *median price appreciation potential of all 1700 stocks* reviewed by Value Line (i.e., both dividend-paying and non-dividend-paying stocks) to the *median expected dividend yields* of all dividend paying stocks reviewed by Value Line.[96] Dr. Lesser incorrectly concludes that the higher expected growth rates of non-dividend paying stocks means the expected returns are higher.[97] (Emphasis added) However, that ignores the fact that the other component of expected returns, the dividend yield, is lower for non-dividend paying stocks than dividend paying stocks. In both instances, Dr. Lesser confuses stock prices with expected rates of return. A security's required

[95] Cilco Rebuttal Ex. 7.10 at 18.
[96] Cilco Ex. 7.8, Schedule 4.
[97] Cilco Rebuttal Ex. 7.10 at 18-19.

rate of return is based on the level of risk inherent in that security. Thus, for a given level of risk, the required rate of return for a dividend-paying security would be the same as the required rate of return for a non-dividend-paying company, although the prices of those securities may differ.

32. Q. Respond to Dr. Lesser's claim that your market rate of return estimate is flawed because it is based only on the expected return of dividend-paying stocks.[98]

A. Dr. Lesser's claim directly contradicts his direct testimony in which he states, "It is appropriate to include only dividend paying stocks to develop a market risk premium because all of the companies in the comparable group pay dividends."[99] First, Dr. Lesser's logic is faulty because the market portfolio is the same regardless of whether one is estimating the cost of equity for dividend paying companies or non-dividend paying companies. Nevertheless, Dr. Lesser also presents a valid reason for including only dividend paying stocks in his estimate of the required rate of return on the market: conducting a constant-growth DCF model on non-dividend paying stocks is not possible.[100]

[98] Cilco Rebuttal Ex. 7.10 at 18.
[99] Cilco Ex. 7.0 at 46.
[100] Despite Dr. Lesser's statement that a market risk premium should only reflect dividend-paying companies, his Value Line-based market rate of return calculation used, in part, the estimated median price appreciation potential of 1700 stocks for 3-5 years hence, which reflects the price appreciation potential of both dividend paying and non-dividend paying companies. Cilco Ex. 7.8, Schedule 4.

Historical Market Risk Premium Estimate

33. Q. In direct testimony you stated, "Dr. Lesser improperly subtracts U.S. Treasury bond income returns (ignoring capital appreciation and reinvestment return) from S&P 500 total returns, including non-dividend paying companies. During the 1926-2001 period, the average U.S. Treasury bond return (i.e., 5.69%) exceeded the average U.S. Treasury bond income return (i.e., 5.23%). That additional return, equaling 46 basis points, implies that the general level of interest rates has declined since 1926."[101] Is this accurate?

A. No. I initially concluded that the 46 basis points difference between U.S. Treasury bond total returns in comparison to income returns results from capital appreciation return, which increases as the interest rate level declines. My conclusion was based, in part, on Ibbotson Associates' publication, *Stocks, Bonds, Bills and Inflation 2002 Yearbook* ("SBBI 2002 Yearbook"), which reads:

> A bond's capital appreciation is defined as the total return less the income return… Capital appreciation, as defined here, captures changes in bond prices caused by changes in the interest rate."[102]

Although the SBBI 2002 Yearbook suggests that U.S. Treasury bond total return less income return equals capital appreciation return, Table 2-6 reveals that reinvestment return is a component included in both U.S. Treasury bond total return and large company stock total return. Moreover, Table B-6 reveals that the long-term government bond capital appreciation

index has declined during the 1926-2001 period. The base year index value equals 1.00, which has fallen to 0.93 in 2001. Thus, due to the imprecise wording in the SBBI 2002 Yearbook described above, I mistakenly concluded that the difference between U.S. Treasury bond total returns and U.S. Treasury bond income returns equals U.S. Treasury bond capital appreciation return. In reality, the difference between U.S. Treasury bond total return and income return results from reinvestment return since long-term government bond total returns actually reflect a small amount of capital depreciation.

34. Q. Does this new information suggest that Dr. Lesser's historical risk premium calculation uses stock and bond returns that are calculated on a consistent basis?

A. No. Dr. Lesser's methodology is still flawed since he subtracts U.S. Treasury bond income return from large company stock total return. Large company stock total returns reflect both a reinvestment return component, as revealed in Table 2-6, and a substantial capital appreciation return. Dr. Lesser excludes U.S. Treasury bond reinvestment and capital appreciation returns in the government bond return portion of his market risk premium calculation while including large company stock reinvestment returns and capital appreciation returns in the market return portion of his risk premium calculation. That inconsistent approach to calculating realized returns is not justified. Although I agree that debt investors would not rationally expect a

[101] Staff Ex. 3.0 at 36-37.

negative return from reinvestment, there is no reason to believe that equity investors would not have that same expectation.

Beta Estimates

35. Q. What is Dr. Lesser's rationale for disregarding your regression beta estimate for the LDC Sample?

A. Dr. Lesser provides no valid rationale for disregarding my regression beta estimate for the LDC Sample. Regarding the use of 60 months of return data to estimate an average beta for my LDC Sample, Dr. Lesser notes that if an individual company or industry experiences a structural change then it is advisable to not use data reflecting pre- and post-restructuring.[103] That statement has no discriminating value. Both the Value Line beta estimates and my estimated beta for the LDC Sample use five years of data. If company or industrial structural changes affected my beta estimate, they affected the Value Line beta estimates as well.

36. Q. Dr. Lesser claims that the methodology you used to estimate beta for your LDC Sample results in a less precise average beta than estimating individual company betas.[104] Is Dr. Lesser correct?

A. No. Dr. Lesser asserts that "Ms. Phipps' estimation approach provides a false level of precision, and her regression estimate of an average beta

[102] Ibbotson Associates, ~~Stocks, Bonds, Bills and Inflation 2002 Yearbook~~, at 59.
[103] Cilco Rebuttal Ex. 7.10 at 24.
[104] Cilco Rebuttal Ex. 7.10 at 24.

should not be used."[105] However, Dr. Lesser did not calculate individual betas for the companies composing the LDC Sample.[106] I calculated individual beta estimates for each company composing my LDC Sample over the same measurement period that I used to calculate the LDC Sample beta estimate, using the same regression technique. Those individual beta estimates are presented on Schedule 9.7. The average of the individual beta estimates equals 0.50, which is the LDC Sample beta estimate. The same is true for the updated LDC Sample beta estimate, which is also presented on Schedule 9.7. The LDC Sample beta does not change when each company's beta estimate is calculated individually then averaged. Thus, Dr. Lesser's claim is baseless.

37. Q. Dr. Lesser asserts that Value Line betas are more likely to be relied on by investors than individual regression beta estimates such as those Staff calculated.[107] Is Dr. Lesser correct?

A. Not necessarily. I estimated beta values using the Merrill Lynch methodology, which is recognized in financial literature and described in the article, "Betas Compared: Merrill Lynch vs. Value Line."[108] Moreover, estimating a beta rather than relying on a published beta value is beneficial in that it permits one to review the output for anomalies. Value Line does not provide such information regarding its beta estimates.

[105] Cilco Rebuttal Ex. 7.10 at 26-27.
[106] Company response to Staff data request FIN-62.
[107] Cilco Rebuttal Ex. 7.10 at 28.
[108] Statman, Meir, "Betas Compared: Merrill Lynch vs. Value Line," ~~The Journal of Portfolio Management~~, Winter 1981.

Dr. Lesser's RPM

38. Q. Explain why it is improper to apply a market risk premium-based beta to a non-market risk premium.

A. Dr. Lesser's risk premium analysis improperly measures a company-specific risk premium by multiplying beta by the difference between the market rate of return and the yield on AAA-rated corporate bonds.[109] However, beta is a measure of the quantity of market risk. The price of market risk equals the difference between the market rate of return and the risk-free rate. Yet, in the RPM, the price of "systematic risk" is the market rate of return less a corporate bond yield. That is, the RPM changes the price of systematic risk (i.e., risk premium), but holds the quantity (i.e., beta) constant. Use of beta in Dr. Lesser's RPM is akin to a customer going to a checkout line with 3 oranges and 2 apples and the cashier charging the customer for 2 oranges and 3 apples. Unless the price of oranges and apples is the same, the customer will be mischarged. The market risk premium does not equal the market rate of return less corporate bond premium. Hence, Dr. Lesser's RPM "mischarges" the cost of equity.

39. Q. Explain why Dr. Lesser's RPM lacks a basis in financial theory.[110]

A. Besides using an erroneous quantity of risk measure (i.e., beta) in conjunction with a non-market risk premium, Dr. Lesser wrongly believes that his RPM estimates a cost of equity that reflects total risk rather than non-

diversifiable risk. The following excerpt from Dr. Lesser's testimony reveals the source of his mistake. He states,

> The [RPM] assumes that a company's cost of equity will reflect some premium over its cost of debt. Diversifiable, or company-specific risk, is reflected in the [risk premium] using an estimate of the prospective long-term bond yield for a company, because a company' bond rating reflects an assessment of all of the diversifiable business and financial risks a company faces. The S&P credit ratings that Ms. Phipps refers to early in her testimony are based on S&P's assessment of these types of risk. Since the [RPM] addresses company-specific risk, it is not surprising that it will show a higher cost of equity than the CAPM, which does not.[111]

Dr. Lesser's statement is wrong in several respects. Since bond ratings reflect the risk that a company will default on its interest or principal payment obligations, and diversifiable risks would affect a company's ability to make those debt service payments, then bonds ratings should reflect diversifiable risks. However, it does not follow that bond yields reflect diversifiable risks since investors can diversify the risk of default by holding a portfolio of bonds. The probability that all of the bonds composing the portfolio would experience an increase in default risk let alone an outright default is remote. Similar to stockholders, bondholders are able to reduce the level of risk inherent in their investments through diversification (e.g., holding a portfolio of bonds); thus, bond yields should not reflect diversifiable risks.

40. Q. What support does Dr. Lesser provide for his risk premium model?

[109] Cilco Rebuttal Ex. 7.10 at 33.
[110] Cilco Rebuttal Ex. 7.10 at 28.
[111] Cilco Rebuttal Ex. 7.10 at 29-30.

A. Dr. Lesser cites three sources that he claims provide detailed discussion of the risk premium model.[112] I have reviewed those sources and concluded that they do not support Dr. Lesser's risk premium analysis. Specifically, Dr. Morin's Regulatory Finance: Utilities' Cost of Capital ("Regulatory Finance") notes that the choice of debt instrument used in the risk premium model must be applied consistently.[113] According to Regulatory Finance, an RPM that estimates the cost of equity by adding a beta-adjusted risk premium to a bond yield is very similar to the Empirical CAPM.[114] The Commission has rejected Dr. Morin's Empirical CAPM for estimating the cost of equity previously, as recently as the Cilco delivery service rates proceeding.[115]

Regulatory Finance also states that distortions can occur when a risk premium is based on a corporate bond yield rather than a Treasury bond yield.[116] This is what the mathematical proof provided in my direct testimony illustrates.[117]

Dr. Lesser claims that Financial Management supports his risk premium model but it only addresses the bond yield plus risk premium model, which differs from Dr. Lesser's model in that it does not use a beta to estimate the risk premium. Financial Management also states, "Empirical work in recent years suggests that the risk premium over a firm's own bond yield has

[112] Company response to Staff data request FIN-63.
[113] Morin, Roger A., ~~Regulatory Finance: Utilities' Cost of Capital,~~ Public Utilities Reports, Inc. 1994, at 278.
[114] ~~Ibid~~. at 283.
[115] Order, Docket Nos. 01-0465/0530/0637, March 28, 2003, at 69-79.
[116] ~~Ibid~~. at 286.

generally ranged from 4 to 7 percentage points, so this method is not likely to produce a precise cost of equity."[118] This is evidenced by Dr. Lesser's 12.50% RPM-derived cost of equity estimate in comparison to his DCF-derived cost of equity estimate (i.e., 10.77%) and CAPM-derived cost of equity estimates (i.e., 11.60% and 11.80%).

Finally, Dr. Lesser's third source, Stocks, Bonds, Bills and Inflation 2003 Yearbook, Valuation Edition, also fails to support Dr. Lesser's RPM. Rather, it provides a discussion of equity risk premiums in general during the 1926-2002 measurement period.[119] Thus, Dr. Lesser has not provided any academic support for his RPM and it should be rejected.

41. Q. Does this conclude your rebuttal testimony?

A. Yes.

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[117] Staff Ex. 3.0 at 41.
[118] Brigham, Eugene F., Louis C. Gapenski and Michael C. Ehrhardt, ~~Financial Management~~, The Dryden Press, 1999, at 380.
[119] Ibbotson Associates, ~~Stocks, Bonds, Bills and Inflation, 2002 Yearbook, Valuation Edition~~, Chapter 5. DR. Lesser references the 2003 Yearbook, but Staff does not yet have that edition and, therefore, relied upon the 2002 Yearbook.

Docket No. 02-0837
Staff Exhibit 9.0
Schedule 9.1

Central Illinois Light Company

Weighted-Average Cost of Capital Summary

Central Illinois Light Company Rebuttal Proposal
June 30, 2002

Capital Structure Component	Balance	Percent of Total Capitalization	Cost	Weighted-Average Cost of Capital
Long-Term Debt	$314,706,894	45.69%	5.98%	2.73%
Preferred Stock	39,735,976	5.77%	5.43%	0.31%
Common Equity	334,284,000	48.54%	11.73%	5.69%
Total	$688,903,180	100.00%		**8.73%**

Staff Rebuttal Proposal
June 30, 2002

Capital Structure Component	Balance	Percent of Total Capitalization	Cost	Weighted-Average Cost of Capital
Long-Term Debt	$314,706,894	45.69%	5.98%	2.73%
Preferred Stock	39,735,976	5.77%	5.43%	0.31%
Common Equity	334,284,000	48.54%	10.47%	5.08%
Total	$688,903,180	100.00%		**8.12%**

Source:
Cilco Rebuttal Exhibit 8.3; Cilco Rebuttal Exhibit 7.10 at 34

Docket No. 02-0837
Staff Exhibit 9.0
Schedule 9.2

Central Illinois Light Company

Updated Growth Rate Estimates

Company	Zacks Earnings	IBES Earnings	Average
AGL Resources Inc.	5.60%	6.23%	5.92%
Atmos Energy Corporation	6.33%	6.09%	6.21%
Laclede Group Inc.	3.67%	4.00%	3.84%
New Jersey Resources	5.81%	7.00%	6.41%
Nicor Inc.	4.90%	5.17%	5.04%
Northwest Natural Gas Company	4.75%	4.67%	4.71%
Peoples Energy Corporation	4.00%	4.74%	4.37%
Piedmont Natural Gas Company	5.00%	4.50%	4.75%
WGL Holdings Inc.	3.83%	4.33%	4.08%

Sources:
Institutional Brokers Estimate System, April 16, 2003
Zack's Investment Research, May 13, 2003

Docket No. 02-0837
Staff Exhibit 9.0
Schedule 9.3

Central Illinois Light Company

Quarterly Dividends and Stock Prices
As of May 13, 2003

Company	Current Quarterly Dividends $D_{0,1}$	$D_{0,2}$	$D_{0,3}$	$D_{0,4}$	Next Dividend Payment Date	Stock Price
AGL Resources Inc.	$0.270	$0.270	$0.270	$0.280	6/2/2003	$25.00
Atmos Energy Corporation	0.295	0.295	0.300	0.300	6/12/2003	23.29
Laclede Group Inc.	0.335	0.335	0.335	0.335	7/1/2003	24.64
New Jersey Resources	0.300	0.300	0.310	0.310	7/1/2003	33.29
Nicor Inc.	0.460	0.460	0.460	0.465	8/1/2003	31.40
Northwest Natural Gas Company	0.315	0.315	0.315	0.315	8/15/2003	26.50
Peoples Energy Corporation	0.520	0.520	0.520	0.530	7/15/2003	39.77
Piedmont Natural Gas Company	0.400	0.400	0.400	0.415	7/15/2003	36.85
WGL Holdings Inc.	0.317	0.318	0.318	0.320	8/01/2003	26.36

Sources:
Standard & Poor's, *Utility Compustat*
Wall Street Journal, www.wsj.com, May 13, 2003

Docket No. 02-0837
Staff Exhibit 9.0
Schedule 9.4

Central Illinois Light Company

Expected Quarterly Dividends

Company	$D_{1,1}$	$D_{1,2}$	$D_{1,3}$	$D_{1,4}$
AGL Resources Inc.	$0.280	$0.280	$0.280	$0.297
Atmos Energy Corporation	0.300	0.300	0.319	0.319
Laclede Group Inc.	0.335	0.348	0.348	0.348
New Jersey Resources	0.310	0.310	0.330	0.330
Nicor Inc.	0.465	0.465	0.465	0.488
Northwest Natural Gas Company	0.330	0.330	0.330	0.330
Peoples Energy Corporation	0.530	0.530	0.530	0.553
Piedmont Natural Gas Company	0.415	0.415	0.415	0.435
WGL Holdings Inc.	0.320	0.320	0.320	0.333

Sources:
Schedules 9.2 and 9.3

Docket No. 02-0837
Staff Exhibit 9.0
Schedule 9.5

Central Illinois Light Company

Updated DCF Analysis Cost of Equity Estimates

Company	Cost of Equity Estimate
AGL Resources Inc.	10.73%
Atmos Energy Corporation	11.85%
Laclede Group Inc.	9.69%
New Jersey Resources	10.44%
Nicor Inc.	11.30%
Northwest Natural Gas Company	9.87%
Peoples Energy Corporation	10.00%
Piedmont Natural Gas Company	9.50%
WGL Holdings Inc.	9.16%
Average	**10.28%**

Docket No. 02-0837
Staff Exhibit 9.0
Schedule 9.6

Central Illinois Light Company

Updated Risk Premium Analysis

Interest Rates on May 13, 2003

U.S. Treasury Bills[63]		U.S. Treasury Bonds[64]	
Discount Rate	Effective Yield	Discount Rate	Effective Yield
1.07%	1.09%	4.79%	4.85%

Risk Premium Cost of Equity Estimate for LDC Sample

Risk-Free Rate		Beta Estimate		Risk Premium		Cost of Common Equity
4.85%	+	0.61	×	(14.37% - 4.85%)	=	10.66%

[63] U.S. Treasury bill yields are quoted on a 360-day discount basis. The effective yield is determined as follows:

$$Effective\ yield = \left(1 + \frac{discount\ rate \times \left(\frac{days\ to\ maturity}{360} \right)}{1 - discount\ rate \times \left(\frac{days\ to\ maturity}{360} \right)} \right)^{\left(\frac{365}{days\ to\ maturity} \right)} - 1$$

where *days to maturity* equals 91 days.

[64] The bond equivalent yield on U.S. Treasury bonds represents a nominal rather than effective yield. The effective yield is calculated as follows:

$$\text{Effective Yield} = [1 + (\text{bond equivalent yield} \div 2)]^2 - 1.$$

Docket No. 02-0837
Staff Exhibit 9.0
Schedule 9.7

Central Illinois Light Company

Beta Estimates for Companies Composing LDC Sample

Company	Direct Testimony Beta Estimate	Rebuttal Testimony Beta Estimate
AGL Resources Inc.	0.61	0.63
Atmos Energy Corporation	0.40	0.43
Laclede Group Inc.	0.42	0.44
New Jersey Resources	0.48	0.47
Nicor Inc.	0.66	0.69
Northwest Natural Gas Company	0.37	0.38
Peoples Energy Corporation	0.47	0.52
Piedmont Natural Gas Company	0.57	0.56
WGL Holdings	0.53	0.54
Average Beta Estimate	**0.50**	**0.52**
LDC Sample Beta Estimate	**0.50**	**0.52**

Source:
Standard & Poor's *Utility Compustat*.

Central Illinois Light Company

Incorporating Quarterly Dividend Payments into the DCF Model

The discounted cash flow (DCF) model calculates the cumulative present value of expected cash flows. The model implicitly assumes reinvestment of each cash flow at the discount rate. Given the future value of a cash flow is a function of the length of the reinvestment period, the timing of the expected cash flows significantly impacts their present value.

Assume the common equity securities of companies A and B have equal risk. Financial theory indicates investors require the same rate of return from securities with equal risk. Therefore, assume investors require a 10% rate of return to purchase either security. Company A pays a $10 dividend one year hence, while Company B pays a $2.50 dividend quarterly. Although both companies pay the same nominal dividend during the year, the dividend of Company B has greater value. At year-end, Company A's dividend is worth $10 because the payment provides no opportunity for reinvestment during the year. At year-end, Company B's dividend is worth $10.37 because shareholders may reinvest the quarterly dividends during the remaining year at the required rate of return.

The future value of a cash flow is determined as follows:

$$FV_n = PV\ (1+k)^n$$

where: $FV_n \equiv$ the future value of the cash flow at period *n*;
$PV \equiv$ the present value of the cash flow;
$k \equiv$ the rate of return; and
$n \equiv$ the number of periods.

With this equation, the year-end value of Company B's dividend is determined as follows:

Through reinvestment, the first dividend will earn a return during the remaining three quarters of the year or:

$$D_{1,4} = [\$2.50(1.1)^{0.75}] = \$2.69.$$

Through reinvestment, the second dividend will earn a return during the remaining two quarters of the year or:

$$D_{2,4} = [\$2.50(1.1)^{0.50}] = \$2.62.$$

Through reinvestment, the third dividend will earn a return over the remaining quarter of the year or:

$$D_{3,4} = [\$2.50(1.1)^{0.25}] = \$2.56.$$

The fourth dividend is paid at year-end and will not be reinvested. Hence, the fourth quarter dividend's value remains $2.50.

The total value of these four quarterly dividend payments equals the summation of each dividend's year-end value, or $10.37. Note the mere summation of the nominal amounts does not correctly value Company B's dividends. Instead, the value of each dividend is measured at a single point in time. (In the above example, this point in time is a year from the stock purchase date).

Although investors perceive equivalent risks from securities A and B and both Companies pay $10 in dividends during the year, Company B's stock will command a higher price because it distributes dividends more frequently. Using the DCF model and, for simplicity, assuming investors expect no growth from either company, the price each company's stock will fetch is computed as follows:

$$P_0 = \frac{D_1}{(k - g)}$$

where: P_0 ≡ the stock price;
D_1 ≡ the year-end value of each company's dividend;
g ≡ the investor-expected dividend growth rate; and
k ≡ the investor-required rate of return.

Thus:

$$P_{0,A} = \frac{\$10.00}{10\% - 0\%} = \$100.00$$

$$P_{0,B} = \frac{\$10.37}{10\% - 0\%} = \$103.70.$$

The above example demonstrates investors value common stock in part upon the timing of dividend payments (i.e., investors consider the opportunity to reinvest dividends).

Estimating the investor-required rate of return for a company paying dividends quarterly with an annual DCF model creates bias that becomes apparent by calculating the required rate of return on Company B's common stock with both quarterly and annual DCF

models. Since Company B's stock price was derived in part from a discount rate of 10%, the investor-required rate of return is known to be 10%. Applying an annual DCF model to Company B's $103.70 stock price, $10.00 annual dividend, and 0% investor-expected growth rate, produces the following estimate of the investor-required rate of return:

$$k_{B(annual)} = \frac{\$10}{\$103.70} + 0\% = 9.64\%.$$

In contrast, a quarterly DCF model estimates Company B's required rate of return as follows:

$$k_{B(quarterly)} = \frac{\$2.50(1.1)^{0.75} + \$2.50(1.1)^{0.50} + \$2.50(1.1)^{0.25} + \$2.50(1.1)^{0}}{\$103.70} + 0\% = 10\%.$$

The annual DCF model understates Company B's required rate of return by thirty-six basis points, while the quarterly DCF model correctly estimates Company B's required rate of return.

In summary, if a company pays dividends quarterly, investors set its observed stock price with the knowledge dividends are received on a quarterly basis. The quarterly DCF model correctly recognizes the time value of quarterly dividend payments and hence, correctly estimates the investor-required rate of return implicit in the company's observed stock price. An annual DCF model does not properly recognize the time value of quarterly dividend payments and hence, understates the investor-required rate of return on equity.